

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/012219

## A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl<sup>7</sup> C01B31/12, H01G9/058, H01B1/12

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl<sup>7</sup> C01B31/12, H01G9/058, H01B1/12

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2004

Kokai Jitsuyo Shinan Koho 1971-2004 Toroku Jitsuyo Shinan Koho 1994-2004

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
CA (STN)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2002-173689 A (Osaka Gas Co., Ltd.), 21 June, 2002 (21.06.02), Claims; Par. Nos. [0013] to [0014], [0017] to [0032], [0045] (Family: none)	1-13
X	JP 2001-274044 A (Osaka Gas Co., Ltd.), 05 October, 2001 (05.10.01), Claims; Par. Nos. [0024], [0032] to [0040], [0061] (Family: none)	1-7, 10-13
X	JP 2001-266640 A (Osaka Gas Co., Ltd.), 28 September, 2001 (28.09.01), Claims; Par. Nos. [0014], [0020], [0030], [0043] (Family: none)	1-7, 10-13

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

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"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search  
16 November, 2004 (16.11.04)Date of mailing of the international search report  
30 November, 2004 (22.11.04)Name and mailing address of the ISA/  
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

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PCT/JP2004/012219

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 51-62196 A (North America Carbon Inc.), 29 May, 1976 (29.05.76), Claim 1; page 2, lower left column, line 11 to page 3, upper right column, line 8; example 5 & US 3864277 A & BE 823423 A & DE 2453325 A & FR 2994130 A & GB 1467496 A & CA 1024972 A	8,9
Y	JP 7-155608 A (Mitsubishi Gas Chemical Co., Inc.), 20 June, 1995 (20.06.95), Claims 1 to 3 (Family: none)	8,9
A	JP 3-242310 A (Tadakazu HIRAYAMA et al.), 29 October, 1991 (29.10.91), Claim 2 (Family: none)	1-13
P,A	WO 03/087262 A1 (Osaka Gas Co., Ltd.), 23 October, 2003 (23.10.03), Claims (Family: none)	1-13